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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/761,033	01/16/2001	Yang Gao	10508/998RSS366	4236

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EXAMINER	
SKED, MATTHEW J	

ART UNIT	PAPER NUMBER
2655	

DATE MAILED: 03/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/761,033	GAO, YANG	
	Examiner	Art Unit	
	Matthew J. Sked	2655	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 January 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *28,29,31-35,38,39,41-45,48 and 49* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *28,29,31-33,38,39,41-43,48 and 49* is/are rejected.

7)☒ Claim(s) *33-35 and 43-45* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/12/06 has been entered.

Response to Amendment

2. Applicant's arguments with respect to claims 28, 29, 31-35, 38, 39 and 41-45 have been considered but are moot in view of the new ground(s) of rejection.

3. Claims 48 and 49 are newly added.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 28, 29, 31, 32, 38, 39, 41 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Funaki (U.S. Pat. 6,006,177) in view of Yamaura (U.S. Pat. 5,724,480).

As per claims 28 and 38, Funaki teaches a method and encoder for encoding a speech signal, comprising:

processing said speech signal to generate a plurality of frames, wherein each of said plurality of frames includes a plurality of subframes (divides frames into subframes, col. 1, lines 30-35);

coding a previous subframe of said plurality of subframes using CELP to generate a previous excitation signal (long term correlation (pitch parameter) is extracted from past excitation signals, col. 1, lines 27-39); and

applying short term enhancement using said previous excitation signal to enhance a current excitation signal for a current subframe (speech signal is long-term predicted with the pitch parameter, col. 1, lines 27-56).

Funaki does not specifically teach wherein said current excitation signal is constructed as a function of a gain, a distance to a peak and a coefficient.

Yamaura teaches a system for coding speech that generates an excitation signal using a gain (excitation gain, col. 3, lines 25-34), a distance to a peak (head pulse and pulse interval, col. 2, lines 61-67) and a coefficient (filter coefficients, col. 2, lines 7-24).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the system of Funaki wherein said current excitation signal is constructed as a function of a gain, a distance to a peak and a coefficient as taught by Yamaura because these features would give a sufficient description of a speech signal for reconstruction.

6. As per claims 29 and 39, Funaki teaches the short term enhancement is achieved by using several pulses from said previous excitation signal to generate one or more short term enhancement pulses based on short term correlation (speech signal is long-term predicted hence it creates pitch pulses in the excitation signal corresponding to the pulses found in the previous excitations, col. 1, lines 27-56).

7. As per claims 31 and 41, Funaki teaches weighting the previous excitation signal by a current weighting filter to estimate correlation peaks at a distance (extracts long-term correlation which would inherently be found from a filter, col. 1, lines 27-56).

8. As per claims 32 and 42, Funaki teaches determining less than five peaks and gains per each subframe from said previous excitation signal (determines a pitch parameter which is the correlation of samples about a peak and a gain for each subframe, col. 1, lines 27-65).

Claims 48 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Funaki in view of Yamaura and taken in further view of Serizawa et al. (U.S. Pat. 5,687,284).

Funaki and Yamaura do not specifically teach the current excitation signal is constructed using an excitation pattern accounts for long-term correlation in which a true pitch lag is shorter than a subframe size, while detected pitch lag is substantially greater than the true pitch lag.

Serizawa teaches an encoder wherein the excitation signal is constructed using an excitation pattern accounting for long-term correlation in which a true pitch lag is

shorter than a subframe size (pitch delay is shorter than the subframe length, col. 8, lines 5-16), while detected pitch lag is substantially greater than the true pitch lag (pitch delay is several times the pitch period, col. 3, lines 41-49).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the system of Funaki and Yamaura to construct the current excitation signal using an excitation pattern accounts for long-term correlation in which a true pitch lag is shorter than a subframe size, while detected pitch lag is substantially greater than the true pitch lag as taught by Serizawa because this configuration would give improved parameter estimation and ensure that random noise spikes do not throw off the pitch lag estimate.

Allowable Subject Matter

9. Claims 33-35 and 43-45 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: Claims 33 and 43 recite the current excitation signal is constructed using a specific equation that is not found in the prior art of record. It would not have been obvious to one of ordinary skill in the art to modify the system of Funanki, Yamaura and Serizawa to arrive at the Applicant's invention.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. McCree (U.S. Pat. 5,966,689) and Proctor et al. (U.S. Pat. Pub. 2003/0182108A1) teach generating an excitation signal using the gain, distance between peaks and a coefficient.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew J. Sked whose telephone number is (571) 272-7627. The examiner can normally be reached on Mon-Fri (8:00 am - 4:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on (571) 272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MS
3/08/06

V. Paul Harper
Patent Examiner
Art Unit 2626